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DIET THERAPY IN CARDIOVASCULAR DISEASES

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Abstract: This article discusses approaches to a healthy lifestyle, the perspectives known to date, as well as dietary therapy and nutrition in cardiovascular diseases.

Keywords: Healthy eating, nutrition rules, importance of diet in heart diseases.

Introduction. Worldwide, many people suffer from diseases such as diabetes, obesity, and cardiovascular illnesses. However, technological advances and various modern tools offer great opportunities to treat and prevent these diseases. Especially, biotechnologies and information technologies, including tools like Artificial Intelligence (AI), can help solve and prevent such problems.

Main Section. The human species began to evolve about 70,000 years ago, when neurological changes in the brain led to a cognitive revolution, and they learned to collaborate in hunting and gathering certain fruits and vegetables for a stable food supply. However, the most significant change in their diet occurred 45,000–35,000 years ago with the invention of fire. This not only allowed them to prepare delicious meals but also enabled them to hunt large animals like mammoths and elephants. Since then, humanity has developed numerous tools to secure its primary resource: food.

Much depends on nutrition. Proper nutrition can help halt disease progression, while improper eating habits can exacerbate it and lead to complications. Managing diet is a crucial part of treatment and recovery in cardiovascular diseases. Adhering to dietary recommendations helps reduce the load on the cardiovascular system, improve its function, and normalize metabolism.

The energy value of the diet is reduced due to fats and carbohydrates: proteins 80 g (of which 50 g from animals), fats 65-70 g, carbohydrates 350-400 g, with a total calorie content of 2500-2800 kcal. Five meals a day are recommended, with dinner three hours before bedtime. Exclude substances that stimulate the nervous system, nitrogenous extractive substances, spices, and sweets; limit the use of table salt (5-6 g) and liquids (up to 1-1.2 liters). Dishes should

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undergo moderate mechanical processing: boiling in water and steaming, baking, and frying pre-cooked foods.

Permitted dishes include soups—vegetarian, cereal-based, milk, and fruit; low-fat meat broths—once a week; meat, poultry, fish; oatmeal and buckwheat porridge; protein omelets; vegetable salads, vinaigrettes; dairy products, cheese. To regulate intestinal function, include vegetables, fruits, and berries with coarse plant fibers, as well as whole wheat and rye bread.

Exclude fatty meats and fish dishes, liver, caviar, pork, lard, spicy snacks, fermented foods, canned goods, alcoholic beverages, cocoa, chocolate, and coffee.

Factors contributing to heart and cardiovascular diseases include a sedentary lifestyle and irregular eating habits. However, machine learning can address this issue by accessing large databases directly. Artificial Intelligence can play a significant role in the treatment and prevention of diseases. For example, researchers, scientists, and medical professionals could introduce proper nutrition tailored to specific cardiovascular diseases, with recommendations provided via wearable devices that can diagnose and suggest treatment options instantly. Interestingly, it could analyze blood levels, the contribution of various chemical compounds in the body, and hormone levels to offer personalized dietary guidance and optimal schedules.

It is recommended to limit the consumption of table salt, foods rich in cholesterol, and hard-to-digest fats (according to WHO data, industrial trans fats are a major cause of cardiovascular diseases). Avoid foods such as chips, French fries, fried fish and chicken, pastries, and sweets—all of which are high in trans fats. Excessive consumption of such foods contributes to cardiovascular diseases, causing an estimated 500,000 premature deaths annually, according to WHO. Include more fruits and vegetables rich in plant fibers, vitamins, and minerals, as well as seafood, in your diet. Additionally, WHO recommends a daily intake of one teaspoon (5 grams) of iodized salt and 25-30 grams of sugar (including sugar in sweets and other food products). Excessive consumption can lead to negative changes in the heart, kidneys, and circulatory system.

Advice for patients with cardiovascular diseases includes reducing animal fats in the diet, sharply limiting table salt, increasing the intake of unsaturated fats, reducing calorie intake (especially for overweight patients), eating small portions 5-6 times a day, and consuming an adequate amount of fiber-rich fruits and vegetables.

Although our country takes pride in being a source of fresh vegetables and fruits—key to proper nutrition and preventing heart diseases—the lack of technological tools and concepts remains a significant obstacle in addressing heart diseases. However, given the abundance of food varieties in the country, the use of proper tools such as Artificial Intelligence and biosensors, combined with investments aimed at solving heart disease, could potentially eliminate the problem.

Conclusion and Suggestions. As mentioned, Artificial Intelligence has great potential

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for changing food supply systems. Analyzing their data and linking biological systems can produce not only healthy food options but also improve overall food production. Despite health challenges, traditional food production has succeeded over the past 100 years.

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